AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application:

Listing of Claims:

1. (Original) In a data processing system, a method to automatically tune a topology of relationships between a plurality of self-organizing agents, comprising:

obtaining information that is descriptive of the topology; and

based at least in part on the obtained information and on at least one criterion, making at least one recommendation to at least one of the plurality of agents that is intended to modify the topology.

2. (Original) A method as in claim 1, where obtaining information is performed by a topology tuner agent that queries a system registry to determine identities of individual ones of the plurality of agents.

3. (Original) A method as in claim 1, where obtaining information is performed by a topology tuner agent that queries individual ones of the plurality of agents to determine to which other agent or agents the individual one of the plurality of agents currently has a relationship.

4. (Original) A method as in claim 1, where obtaining information is performed by a topology tuner agent that queries a system registry to determine to which other agent or agents that individual ones of the plurality of agents currently have a relationship.

5. (Original) A method as in claim 1, where obtaining information is performed on a periodic basis by a topology tuner agent to update the state of the topology, and where the topology tuner agent makes the at least one recommendation when some topology threshold condition is satisfied.

6. (Original) A method as in claim 1, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the agents.

7. (Original) A method as in claim 1, where the at least one criterion comprises a vulnerability of the topology to a failure of one or more of the agents.

8. (Original) A method as in claim 1, where the at least one criterion comprises a rate at which agents form new relationships.

9. (Original) A method as in claim 1, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the agents, and where the at least one recommendation does not constrain the set of potential agents that an agent may select from to form a new relationship or relationships such that the topology evolves towards a uniform random graph.

10. (Original) A method as in claim 1, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the agents, and where the at least one recommendation constrains the set of potential agents that an agent may select from to form a new relationship or relationships such that at-risk agents have few relationships, and such that the topology that contains the not at-risk agents evolves towards a uniform random graph. .

~~12.~~11. (Currently amended) A method as in claim 1, where the at least one criterion comprises a vulnerability of the topology to a failure of one or more of the agents, and where the at least one recommendation constrains the set of potential agents that an agent may select from to form a new relationship or relationship such that the topology evolves towards a scale-free network.

~~13.~~ 12. (Currently amended) A method as in claim 1, where obtaining information comprises monitoring the drift or re-self-organization of the topology over time, and where the at least one recommendation is made to compensate for the drift.

~~14.~~ 13. (Currently amended) A method as in claim 1, where obtaining information and making at least one recommendation are performed by a topology tuner agent that is recognized by the plurality of agents to have privileges giving it sufficient nominal authority to make its recommendations to the other agents effective.

~~15.~~ 14. (Currently amended) A method as in claim ~~14~~ 13, where said topology tuner agent behaves otherwise as a peer agent that uses the same system messaging infrastructure as the other agents.

~~16.~~ 15. (Currently amended) A method as in claim 1, where making at least one recommendation is performed by a topology tuner agent using a multi-cast technique to simultaneously contact a number of the agents.

~~17.~~ 16. (Currently amended) A method as in claim 1, where making at least one recommendation is performed by a topology tuner agent using a single-cast technique to individually contact the agents.

~~18.~~ 17. (Currently amended) A method as in claim 1, where obtaining gathers information concerning all relationships, and where the at least one recommendation applies to all types of relationships between agents.

~~19.~~ 18. (Currently amended) A method as in claim 1, where obtaining information gathers information concerning relationships of a certain type or types, and where the at least one recommendation applies only to the certain type or types of relationships between agents.

~~20.~~ 19. (Currently amended) A method as in claim 1, where obtaining information and making at least one recommendation are performed in response to a notification of a change in the topology.

21. 20. (Currently amended) A method as in claim 1, where obtaining information and making at least one recommendation are performed by a topology tuner agent that monitors how frequently individual ones of the agents change their relationships, said topology tuner agent querying those agents more frequently that more frequently change their relationships.

22. 21. (Currently amended) A method as in claim 1, where obtaining information and making at least one recommendation are performed by an entity in an environment that hosts the plurality of agents.

23. 22. (Currently amended) A method as in claim 1, where the plurality of agents operate with a common set of system policies that are capable of being changed by a policy update procedure, and where making at least one recommendation is performed during a policy update procedure.

24. 23. (Currently amended) A topology tuner software agent operable in a data processing system that comprises a plurality of self-organizing software agents, comprising computer program code for obtaining information that is descriptive of a topology of relationships between the self–organizing software agents from at least one of a system registry function and from the self-organizing software agents themselves; and computer program code, responsive to the obtained information and at least one criterion, for making at least one recommendation to at least one of the plurality of self-organizing software agents that is intended to modify the topology.

~~25.~~ 24. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where obtaining information is performed periodically by said topology tuner agent to update the state of the topology, and where the topology tuner software agent makes the at least one recommendation in response to a topology threshold condition being satisfied.

~~26.~~ 25. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the self-organizing software agents.

~~27.~~ 26. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where the at least one criterion comprises a vulnerability of the topology to a failure of one or more of the self-organizing software agents.

~~28.~~ 27. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where the at least one criterion comprises a rate at which the self-organizing software agents form new relationships.

~~29.~~28. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the self-organizing software agents, and where the at least one recommendation does not constrain the set of potential self-organizing software agents that a self-organizing software agent may select from to form a new relationship or relationships such that the topology evolves towards a uniform random

graph.

30. 29. (Currently amended) A topology tuner software agent as in claim 2423, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the self-organizing software agents, and where the at least one recommendation constrains the set of potential self-organizing software agents that a self-organizing software agent may select from to form a new relationship or relationships such that at-risk agents have few relationships, and such that the topology that contains the not at-risk agents evolves towards a uniform random graph. .

31. 30. (Currently amended) A topology tuner software agent as in claim 2423, where the at least one criterion comprises a vulnerability of the topology to a failure of one or more of the self-organizing software agents, and where the at least one recommendation constrains the set of potential self-organizing software agents that a self-organizing software agent may select from to form a new relationship or relationship such that the topology evolves towards a scale-free network.

32. 31. (Currently amended) A topology tuner software agent as in claim 2423, where said computer program code for obtaining information comprises computer program code for monitoring the drift or re-self-organization of the topology over time, and where the at least one recommendation is made to compensate for the drift.

33. 32. (Currently amended) A topology tuner software agent as in claim 2423, where said topology

tuner software agent is recognized by the plurality of self-organizing software agents to have privileges giving it sufficient nominal authority to make its recommendations to the self-organizing software agents effective.

34.33. (Currently amended) A topology tuner software agent as in claim 3332, where said topology tuner software agent behaves otherwise as a peer agent that uses the same system messaging infrastructure as the self-organizing software agents.

35. 34. (Currently amended) A topology tuner software agent as in claim 2423, where making at least one recommendation is performed using a multi-cast technique to simultaneously contact a number of the self-organizing software agents, or using a single-cast technique to individually contact the self-organizing software agents.

36.35. (Currently amended) A topology tuner software agent as in claim 2423, where said computer program code for obtaining information gathers information concerning all relationships, and where the at least one recommendation applies to all types of relationships between self-organizing software agents.

37.36. (Currently amended) A topology tuner software agent as in claim 2423, where said computer program code for obtaining information gathers information concerning relationships of a certain type or types, and where the at least one recommendation applies only to the certain type or types of

relationships between self-organizing software agents.

~~38.~~37. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where said computer program code for obtaining information and making at least one recommendation operate in response to a notification of a change in the topology.

~~39.~~ 38. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where said topology tuner software agent that monitors how frequently individual ones of the self-organizing software agents change their relationships, and queries those self-organizing software agents more frequently that more frequently change their relationships.

~~40.~~ 39. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where the plurality of self-organizing software agents operate with a common set of system policies that are capable of being changed by a policy update procedure, and where said computer program code for making at least one recommendation operates through a policy update procedure.

~~41.~~ 40. (Currently amended) A topology tuner software agent as in claim ~~24~~23, where said computer program code is stored on a computer readable medium.

~~42.~~41. (Currently amended) A topology tuner software agent as in claim ~~25~~24, where said topology threshold condition is expressed as a variable threshold value.

~~43.~~ 42. (Currently amended) A data processing system comprising a plurality of self-organizing software agents capable of autonomously establishing relationships between themselves, where the totality of the relationships can be represented by a topological structure having nodes that each comprise one of the plurality of software agents and links between the nodes that comprise the established relationships, said data processing system further comprising a topology tuning function that obtains information that is descriptive of the topology and, based at least in part on the obtained information and on at least one criterion, that makes a recommendation to at least one of the plurality of software agents that is intended to modify the topology.

~~44.~~ 43. (Currently amended) A data processing system as in claim ~~43~~42, where topology tuning function is performed by a topology tuner software agent.

~~45.~~44. (Currently amended) A data processing system as in claim ~~43~~42, where the at least one criterion comprises a rate at which software agents form new relationships.

~~46.~~45. (Currently amended) A data processing system as in claim ~~43~~42, where the at least one criterion comprises a vulnerability of the topology to an attack directed to one or more of the software agents, and where the at least one recommendation in one case does not constrain the set of potential software agents that a software agent may select from to form a new relationship or relationships such that the topology evolves towards a uniform random graph, and where the at least

one recommendation in another case does constrain the set of potential software agents that a software agent may select from to form a new relationship or relationships such that at-risk software agents have few relationships, and such that a portion of the topology that contains not at-risk software agents evolves towards a uniform random graph.

47.46. (Currently amended) A data processing system as in claim 4342, where the at least one criterion comprises a vulnerability of the topology to a failure of one or more of the software agents, and where the at least one recommendation constrains the set of potential software agents that a software agent may select from to form a new relationship or relationship such that the topology evolves towards a scale-free network.